CLAIMS

1. A binder used for bonding electronic components, a physical property of the binder being different in a thickness direction thereof.

2. The binder as defined in Claim 1,
wherein the binder is an anisotropic conductive film.

3. The binder as defined in Claim 2,
wherein the binder forms a two-layer structure comprising a first layer formed of a first resin as a base material, and a second layer formed of a second resin as a base material, the first resin and the second resin having different physical properties.

4. The binder as defined in Claim 3,
wherein a coefficient of thermal expansion of the first resin is smaller than a coefficient of thermal expansion of the second resin.

5. The binder as defined in Claim 4,
wherein the silica-based filler is mixed only in the first resin.

6. The binder as defined in Claim 4,
wherein the silica-based filler is mixed in the first resin

and the second resin, and a mixing ratio of the silica-based filler in the first resin is greater than a mixing ratio of the silica-based filler in the second resin.

7. The binder as defined in Claim 3,

wherein the second resin is made lower in elasticity than the first resin.

8. The binder as defined in Claim 7,

wherein the second resin is a metamorphic epoxy resin.

9. The binder as defined in Claim 7,

wherein the first resin is an epoxy resin, and

wherein the second resin is a biphenyl resin.

10. The binder as defined in Claim 3,

wherein conductive particles are dispersed only in the second resin.

11. The binder as defined in Claim 3,

wherein the conductive particles are dispersed only in the second resin; and

wherein the second layer is thinner than the first layer, and the second resin has higher viscosity than the first resin when melted.

12. The binder as defined in Claim 11,

wherein the silica-based filler is mixed only in the second resin.

13. The binder as defined in Claim 11,

wherein the silica-based filler is mixed in the first resin and the second resin, and a mixing ratio of the silica-based filler in the first resin is greater than a mixing ratio of the silica-based filler in the second resin.

14. The binder as defined in Claim 11,

wherein a molecular weight of the second resin is greater than a molecular weight of the first resin.

15. A semiconductor device comprising:

a semiconductor chip;

a substrate on which a interconnecting pattern is formed; and

a binder electrically connecting the semiconductor chip and the interconnecting pattern,

wherein a physical property of the binder being different in a thickness direction thereof.

16. The semiconductor device as defined in Claim 15,

wherein the binder is an anisotropic conductive film.

17. The semiconductor device as defined in Claim 16,

wherein the binder forms a two-layer structure comprising

a first layer formed of a first resin as a base material and disposed on a side of the semiconductor chip, and a second layer formed of a second resin as a base material and disposed on a side of the substrate, the first resin and the second resin having different physical properties.

18. The semiconductor device as defined in Claim 17, wherein the binder is the binder as defined in any one of Claims 4 to 14.

19. A circuit board on which the semiconductor device as defined in any one of Claims 15 to 17 is mounted.

20. Electronic equipment comprising the semiconductor device as defined in any one of Claims 15 to 17.

21. A method of manufacturing a semiconductor device, comprising a step of providing a binder between a semiconductor chip and a interconnecting pattern of a substrate on which is formed the interconnecting pattern, pressing the semiconductor chip and the substrate, and electrically connecting the semiconductor chip and the interconnecting pattern,

wherein the binder differs in a physical property in a thickness direction thereof.

22. The method of manufacturing a semiconductor device as defined in Claim 21,

wherein the binder is an anisotropic conductive film.

23. The method of manufacturing a semiconductor device as defined in Claim 22,

wherein the binder forms a two-layer structure comprising a first layer formed of a first resin as a base material, and a second layer formed of a second resin as a base material, the first resin and the second resin having different physical properties.

24. The method of manufacturing a semiconductor device as defined in Claim 23,

wherein the second layer is formed after the first layer.

25. The method of manufacturing a semiconductor device as defined in Claim 23,

wherein the first layer is disposed on a side of the semiconductor chip, and the second layer is disposed on a side of the substrate.

26. The method of manufacturing a semiconductor device as defined in any one of Claims 21 to 25,

wherein the binder is the binder as defined in any one of Claims 4 to 14.